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NASA TECH BRIEF

A Study of NACA and NASA Published Information of Pertinence in the Design of Light Aircraft

The problem:

Make relevant technical information in NASA files available to engineers in the light aircraft field. General aviation manufacturers are small compared to other aerospace manufacturers, and do not have the large engineering staffs needed to adapt new technology rapidly. However, research at the National Aeronautics and Space Administration, although originally performed in support of military and commercial aircraft programs, could be utilized in general aviation, particularly since the flight speed of light aircraft has reached regions in which military and commercial transport aircraft have operated during the past twenty-nine years.

The solution:

NACA/NASA-generated literature pertinent to the design of light aircraft has been organized, catalogued, and evaluated. The results are published in a three-volume report.

How it's done:

Material classed as pertinent to the design of light aircraft is presented in the form of abstracts catalogued by publication number. Publications not considered applicable are simply listed by publication number and title.

The catalogued abstracts are appendices to the report, the main body of which is a series of studies discussing the content, quality, detail and value of the literature reviewed. With comprehensive references to the appended abstracts, information pertinent to the design of light aircraft is discussed subject by subject.

Information is made available in the areas of structural design, propulsion subsystems, landing gear loads, flutter, refined performance calculation procedures, and high horsepower propellors. Basic data available could be used to produce criteria for stability and control characteristics, as well as optimum aerodynamic, propulsion, and structural relationships. The application of computer techniques is required to develop and apply information in the areas of structural design, aerodynamic wing loads, and aerodynamic loads on tail surfaces.

Approximately 10,000 documents were examined, including all NACA-NASA aircraft literature published since 1940. However, since an in-depth index of all current NASA-generated documents has been available for computer search since 1962, and since current reports are more likely to be familiar to the working engineer, major emphasis was placed on those reports produced prior to 1962.

Note:

The following documentation may be obtained from:

National Technical Information Service
Springfield, Virginia 22151
Single document price $3.00
(or microfiche $0.65)

Reference:
NASA-CR-1484, CR-1485, and CR-1486, A Study of NACA and NASA Published Information of Pertinence in the Design of Light Aircraft (Volumes I, II, and III).

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